

Mallinckrodt Inc.

**HoltraChem Manufacturing Site
Orrington, Maine**

**Phase 3 - Supplement to the Decontamination
and Dismantling Work Practices Plan**

April 2006

Work Plan

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Section 1

Introduction

1.1 Purpose of Document

The purpose of this document is to supplement the Detailed Work Practices Plan for the Cell Process Dismantling Interim Stabilization Measure by identifying the extent of work and presenting the intended practices to be employed in Phase 3 of the Decontamination and Dismantling Program at the HoltraChem Manufacturing Site in Orrington, Maine. The objectives of Phase 3 are to further reduce the risk of potential releases of hazardous materials to the ground or atmosphere by cleaning and removing the stored items (site debris), removing the remaining residual tank contents, disposing of certain items, and performing preparation for demolition of contaminated buildings. In addition, several existing sumps will be cleaned to remove residual liquids, sludge, and sediment.

CDM Constructors Inc. (CDM) will perform this work under contract to Mallinckrodt Inc. (Mallinckrodt).

This phase of dismantling operations will continue the prior dismantling operations, using a similar project organization and responsibilities. Two personnel changes have been made to the project organization since issue of the original Work Practices Plan. Mr. Roland Guerrette will replace Mr. Joseph Sabo as the Project Superintendent and Site Health and Safety Coordinator. Mr. Sabo is on long-term assignment in Afghanistan. Mr. David Tonini will serve as on-site Construction Quality Assurance Representative.

The purpose of this work practices plan is to supplement the original plan to cover the additional dismantling activities. Background information pertinent to the Interim Corrective Measure and an explanation of the current project organization are presented in the original Work Practices Plan (Detailed Work Practices Plan for the Cell Process Dismantling Interim Stabilization Measure, CDM, Revised March 21, 2003).

1.2 Associated Documents

1.2.1 Previous Detailed Work Practices Plan

The information provided herein regarding Phase 3 of the overall dismantling program is intended to supplement the scope and procedures described in the previous Detailed Work Practices Plan (CDM, March 21, 2003) and Phase 2 Supplement (CDM, April 30, 2004). This document presents processes and procedures that are specific to Phase 3. The previous Detailed Work Practices Plans should be referenced for elements that are common to all.

1.2.2 Health and Safety Plan

The work will be performed under the current Site Remediation Health and Safety Plan (CDM Revised June 14, 2004), which will be updated as necessary to cover the activities of Phase 3.

1.2.3 Perimeter Air Monitoring Program

Ambient air monitoring during dismantling activities will be performed in accordance with the Cell Process Dismantling Perimeter Air Monitoring Plan (CDM, Revised March 7, 2003).

1.2.4 Quality Assurance Project Plan

Quality Assurance/Quality Control procedures for the dismantling project and associated analysis are presented in the Cell Process Dismantling Quality Assurance Project Plan (QAPP) (CDM Revised April 30, 2003). This plan has been updated to reflect the Phase 3 activities. The updates consist of minor changes to reflect the additional scope and do not affect the administrative and technical aspects of the QAPP.

Section 2

Scope and Sequence of Dismantling

2.1 Overview of Dismantling

2.1.1 Objectives for the Dismantling

The objectives of this phase are as follows:

- Remove remaining free residual hazardous contaminants associated with the process systems, including liquids, solids, sludge, and contaminated water, to eliminate the potential for their release to the environment.
- Decontaminate and dispose of debris and scrap materials in yard areas and throughout the site.
- Prepare the contaminated buildings for demolition.

2.2 Phase 3 Scope of Work

2.2.1 Overview

The scope of work for Phase 3 includes the major elements outlined below:

- Cleaning residual materials from fixed tanks and vessels;
- Cleaning and disposal of scrap tanks and vessels;
- Remove and recycle de-energized transformers and rectifiers;
- Dispose of debris and scrap stored in various locations on site;
- Rinse interior of Cell Building, Liquefaction Building, and Drying Shed;
- Clean building and yard sumps;
- Clean elemental mercury from concrete slab on west side of Cell Building; and
- Relocate and weather protect utilities running through the Cell Building.

The following subsections define the scope of work for each of these elements in more detail.

2.2.2 Tank Cleaning

The purpose of the tank cleaning program is to remove and dispose of residual materials from the tanks, and rinse the tanks to prepare them for dismantling and disposal. A total of 57 tanks or sets of tanks have been identified for cleaning. Most of these tanks are fixed in their original locations, but some of the tanks are located in various scrap/spare parts storage areas. **Table 2-1** lists the tanks identified for

Table 2-1
Phase 3 - Tank Cleaning Summary

Tank No.	Description	Location	Size	Mat'l	Est. Wt. (lbs)	Tank Mat'l Hg Conc. (mg/kg)	Residual Contents	Est. Qty. Residue	Anticipated Cleaning and Disposal Actions
2	Spare Surplus Caustic Tank	Brine Area	10' x 8'	Nickel	1,100	100.38	high pH film	Dry Film	Decontaminate Tank, Process liquids onsite
4	(2) Bleach Stg Tanks	CP Area	8' x 15'	PVC, FRP	4,000	0.07	high pH liquid	563 gals	Remove liquids, Process Onsite - Rinse tank
5	Bone Char Filter	CP Area	2' x 8'	Steel	875	0.03	chloropicrin bone char	0.9 yd ³	Remove solids, Dispose Offsite - Rinse tank
6	(2) Chloropicrin Stg Tanks	CP Area	5' x 30'	Steel	31,588	n.s.	chloropicrin liq. & sludge	unknown	Remove solids, Dispose Offsite - Rinse tank
7	Brine Sand Filter Liner	CP Area	8' X 8'	Steel, FRP	4,665	1.09	Brine Solids	13 yd ³	Remove solids, Dispose Offsite - Rinse tank
8	Old Brine Pump Tank	Lagoon Area	8' X 17'	FRP	1,336	0.16	Brine Solids	3.5 yd ³	Remove solids, Dispose Offsite - Rinse tank
9	HCL Stg Overflow Tank	HCL Storage	6' X 6'	FRP	429	0.42	low pH liquid	Residue	Decontaminate tank, Process Onsite
10	B-1 HCL Storage	HCL Storage	12' X 20'	FRP	2,481	0.05	low pH liquid	163 gals	Pump-utilize liquids, Rinse tank
11	Brine Receiver	Liquefaction	10' x 22'	Steel,Lined	13,121	1,240.56	Brine Solids	374 gals	Remove solids,Dispose Offsite- Rinse tank
12	Brine Condensate Tank	Liquefaction	4' X 3'	FRP	159	4.26	Liquids	10 gals	Pump liquids, Process Onsite-Rinse tank
13	Brine Dechlorination Cooler	Liquefaction	1' x 13'	Titanium	1,600	0.19	Brine Film	Residue	Decontaminate tubes- Process liquids Onsite
14	HCL Head Tank	Liquefaction	6' X 6'	FRP	429	6.44	low pH liquid	105 gals	Pump liquids, Process Onsite - Rinse tank
15	Sulfuric Head Tank	Liquefaction	6' X 7'	Steel	2,916	3.69	low pH film	Dry Film	Pump/Dispose of liquids Offsite-Rinse tank
16	Soft Water Head Tank	Liquefaction	10' X 10'	FRP	1,193	49.22	high pH liq., Hg	58 gals	Remove liquids, Process Onsite - Rinse tank
17	Brine Head Tank	Liquefaction	12' x 20'	FRP	2,481	106.55	Brine Liquids	Residue	Pump liquids, Process Onsite - Rinse tank
18	HCL Scrubber	Liquefaction	2' x 9'	FRP	300	0.19	Brine Solids	0.7 yd ³	Remove packing,Dispose Offsite-Rinse tank
19	Weak Sulfuric Dechlorinator	Drying Shed	6' X 8'	Steel, Brick	12,000	0.94	low pH liquid	21 gals	Pump/Dispose of liquids Offsite- Rinse tank
21	Chlorine Condensate Tank	Drying Shed	6' X 8'	FRP	525	1.85	low pH film	Dry Film	Pump liquids, Process Onsite-Rinse tank
24	Old HCL Boiler Treatment	Utility Bldg	3' x 4'	PVC	30	43.51	low pH liquid	5 gals	Pump liquids,Process Onsite-Rinse tank
25	Old Caustic Boiler Treat	Utility Bldg	2.5' x 4'	PVC	35	n.s.	high pH liq., Hg	In Use	Pump liquids, Process Onsite-Rinse tank
26	Day Oil Tank	Utility Bldg	10' X 20'	Steel	12,084	0.05	no.2 fuel oil	Residue	Pump, Utilize Oil Onsite-Rinse tank
27	Waste Oil Tank	Utility Bldg	5' X 7'	Steel	2,308	0.94	oil, water	Residue	Decontaminate tank-Process Onsite
28	(2) Old Brine Storage	W. Cell Room	12' X 20'	FRP	9,924	13.26	high pH liquid	4.2 yd ³	Remove solids, Dispose Offsite-Rinse tank
29	Kerosene Tank	Clo ₃ Bldg	3' x 15'	Steel	2,406	0.03	kerosene	Residue	Pump Kerosene,Utilize Onsite-Rinse tank
30E	East Caustic Storage	Loading Area	48' X 30'	Steel,Lined	125,962	11.63	high pH liquid	Residue	Pump liquids, Process Onsite-Rinse tank
31	(2) Fuel Oil Storage	Loading Area	12' x 24'	Steel	34,990	0.14	no.2 fuel oil	Residue	Pump, Utilize Oil Onsite-Rinse tank
32	45% Sulfuric Storage	Loading Area	10' x 10'	FRP	1,193	0.41	low pH liquid	146 gals	Pump,Dispose of liquids Offsite-Rinse tank
33	Weak Sulfuric Storage	Loading Area	10' x 18'	Steel,Lined	11,177	0.11	low pH liquid	470 gals	Pump, Dispose of liquids Offsite-Rinse tank
34	Strong Sulfuric Storage	Loading Area	12' x 12'	Steel,Lined	10,497	0.16	low pH liquid	0.8 yd ³	Pump,Dispose of liquids Offsite-Rinse tank
35	Diesel Oil Storage	R/R Siding	12' x 18'	Steel	13,996	0.03	diesel fuel	Residue	Pump, Utilize Oil Onsite-Rinse tank
36	Misc Oil Tank	R/R Siding	3' x 8'	Steel	1,385	0.03	no.2 fuel oil	17 gals	Pump, Utilize Oil Onsite-Rinse tank
37	Caustic Feed Tank	Drying Shed	12' x 8'	Steel	8,164	0.17	low pH liquid	Residue	Pump liquids, Process Onsite-Rinse tank
38	Bleach Circulation Tank	Drying Shed	8' x 12'	FRP,PVC	1,336	0.42	Hi pH Liquids	187 gals	Pump liquids,Process Onsite-Rinse tank
39	River Well Treatment Tank	River Bank	7' x 15'	Steel	6,293	0.03	Hi pH Liquids	3 gals	Remove liquids-Dispose Offsite
40	(9) HCL Stg Tanks	HCL Storage	12' X 20'	FRP	22,329	0.08	low pH liquid	Residue	Pump liquids, Process Onsite-Rinse tank
41	(3) Chlorine Storage	S. Cell Bldg	10' x 54'	Steel	172,000	0.08	low pH solids	Residue	Decontaminate Tank - Dispose Offsite

Table 2-1
Phase 3 - Tank Cleaning Summary

Tank No.	Description	Location	Size	Mat'l	Est. Wt. (lbs)	Tank Mat'l Hg Conc. (mg/kg)	Residual Contents	Est. Qty. Residue	Anticipated Cleaning and Disposal Actions
42	30 ton Cl ₂ Catch Pot	Liquefaction	5' x 30'	Steel	15,794	0.09	low pH solids	Residue	Decontaminate Tank - Dispose Offsite
43	Process Water Storage	Brine Area	30' x 30'	Steel	65,605	n.s.	water	Residue	Decontaminate Tank - Dispose Offsite
44	(5) Brine Coal Filters	Scrap Yard	8' x 18'	Steel, Lined	107,765	0.40	coal	25 yd ³	Remove Coal,Dispose Offsite-Rinse tank
45	(2) Bleach Towers	Scrap Yard	4' x 26'	FRP	578	0.06	Plastic Saddles	9.7 yd ³	Remove Sads,Dispose Offsite-Rinse tank
46	Old Brine Storage	Scrap Yard	12' x 20'	FRP	4,962	5.92	Brine Solids	0.4 yd ³	Remove solids,Dispose Offsite-Rinse tank
47	Old Brine Head Tank	Scrap Yard	10' x 16'	FRP	1,670	19.90	Brine Solids	0.6 yd ³	Remove solids,Dispose Offsite-Rinse tank
48	Old Wastewater Precoat Tk	Scrap Yard	7' x 7'	FRP	584	0.08	Solids	Residue	Decontaminate tank - Dispose Offsite
49	Old Brine Pump Tank	Scrap Yard	7' x 14'	FRP	974	0.21	Brine Liquids	28 gals	Pump liquids,Process Onsite-Rinse tank
50	Old Wastewater Tank	Scrap Yard	12' x 20'	FRP	2,481	72.91	Neutral Liquid	Residue	Decontaminate tank - Dispose Offsite
51	Old Brine Receiver	Scrap Yard	10' x 22'	Steel,Lined	13,121	29.06	Brine Solids	0.6 yd ³	Remove solids,Dispose Offsite-Rinse tank
52	Old Wastewater "D" Filter	Scrap Yard	6' x 9'	Steel,Lined	4,665	1,155.50	Brine Solids	Residue	Decontaminate Filter - Dispose Offsite
53	Old Brine Filter	Scrap Yard	5' x 13'	Steel,Lined	5,022	28.99	Brine Solids	Residue	Decontaminate Filter - Dispose Offsite
54	Old Sulfuric Storage	Scrap Yard	10' x 13'	Steel,Asbes	8,747	0.22	low pH solids	0.9 yd ³	Remove solids,Dispose Offsite-Rinse tank, Move tank to containment
55	(2) Old Decomposer Shells	Scrap Yard	4' x 10'	Steel	4,666	17.16	Rust	Residue	Decontaminate Shell - Dispose Offsite
56	Old 30 ton Cl ₂ Tank	North Bank	5' x 30'	Steel	15,794	0.13	low pH solids	Residue	Decontaminate Tank - Dispose Offsite
57	(2) W/W Vent Tanks	CLO ₃ Bldg	55 gal	Plastic	250	0.58	Mersorb	0.7 yd ³	Remove solids,Dispose Offsite-Rinse tank
58	Portable Fuel Oil Tk	CLO ₃ Bldg	200 gal	Steel	350	n.s.	no. 2 fuel oil	15 gals	Remove oil , Utilize Onsite-Rinse tank
60	(2) Regeneration Tanks	CLO ₃ Bldg	10' x 10'	FRP	2,386	0.55	Neutral Liquid	Residue	Decontaminate Tank - Dispose Offsite
61	Old Brine Precoat Tank	W. Cell Room	7' x 7'	FRP	974	8.72	Brine Solids	Residue	Decontaminate Tank - Dispose Offsite
62	Old Fuel Tank	Scrap Yard	4' x 8'	Steel	1,944	0.05	no. 2 fuel oil	Residue	Decontaminate Tank - Dispose Offsite
63	Old CP Calcium Dryer	Scrap Yard	1' x 8'	Steel	413	0.03	Calcium	unknown	Remove solids,Dispose Offsite-Rinse tank

- Notes: 1) n.s. indicates not sampled
2) Tank Material Hg Concentration is an average of sample results for items with more than one sample.
3) Shaded cells indicate sample result exceeds 4 mg/kg.

cleaning, their location, size, and the quantity and nature of residuals to be removed. The tanks have been given a numerical assignment. The numerical sequence does not reflect the order in which tanks will be cleaned or removed; rather they provide quick references to **Figure 2-1** showing their respective locations at the HoltraChem site. In general, the tanks will be cleaned by pumping out the contents and rinsing the inside of each tank. The intent of the cleaning is to remove the contents and residue, not necessarily completely decontaminate the tank shell to the point where mercury levels are less than 4 mg/kg. The contents will either be processed in the on-site wastewater treatment plant, or disposed off-site. The particular details of proposed removal and disposal are shown in Table 2-1.

2.2.3 Spill Prevention and Capture

Liquids of concern for spill control consist of elemental mercury, residual sulfuric acid, sodium hypochlorite, sodium hydroxide, and used decontamination wash water. A combination of procedural precautions and engineered controls will be employed to contain these liquids and to prevent their release to the ground or subsurface.

Tank cleaning will be conducted in various locations. Former process vessels will be decanted and drained/pumped in place utilizing portable tanks placed on casters and equipped with forklift frames for ease of movement. Once partially filled, the portable tanks will be transported to the cell building where contaminated liquid or sediment will be transferred into the appropriate disposal containers or where reusable chemicals can be transferred into containers for future consumption. Or, acceptable liquids will be transferred to the current wastewater treatment system for processing.

During pipe cutting or disassembly, portable high-density plastic spill cribs will also be positioned directly under the work area. Manageable sections of material will be placed onto the containment cribs, and relocated to the "equipment decontamination area" in the sludge loading building, which is designed specifically for liquid containment and capture. The decontamination activities will be confined to the sludge loading building. To date, these procedures have been successfully applied during both Phase 1 and Phase 2 operations.

2.2.4 Transformer and Rectifier Oil Removal

As previously mentioned, there are 24 known oil-filled electrical items on site. Fourteen of these items are not used. Most of the items have been sampled according to EPA protocols for PCB contaminated electrical equipment. The test results are shown in **Table 2-2**. Items that were not tested are assumed to have PCB concentrations less than 1.0 ppm due to their age. The locations of the electrical items are shown on **Figure 2-2**. The other electrical items are currently in use and are needed to maintain the operation of the site. The fourteen items that are not used will

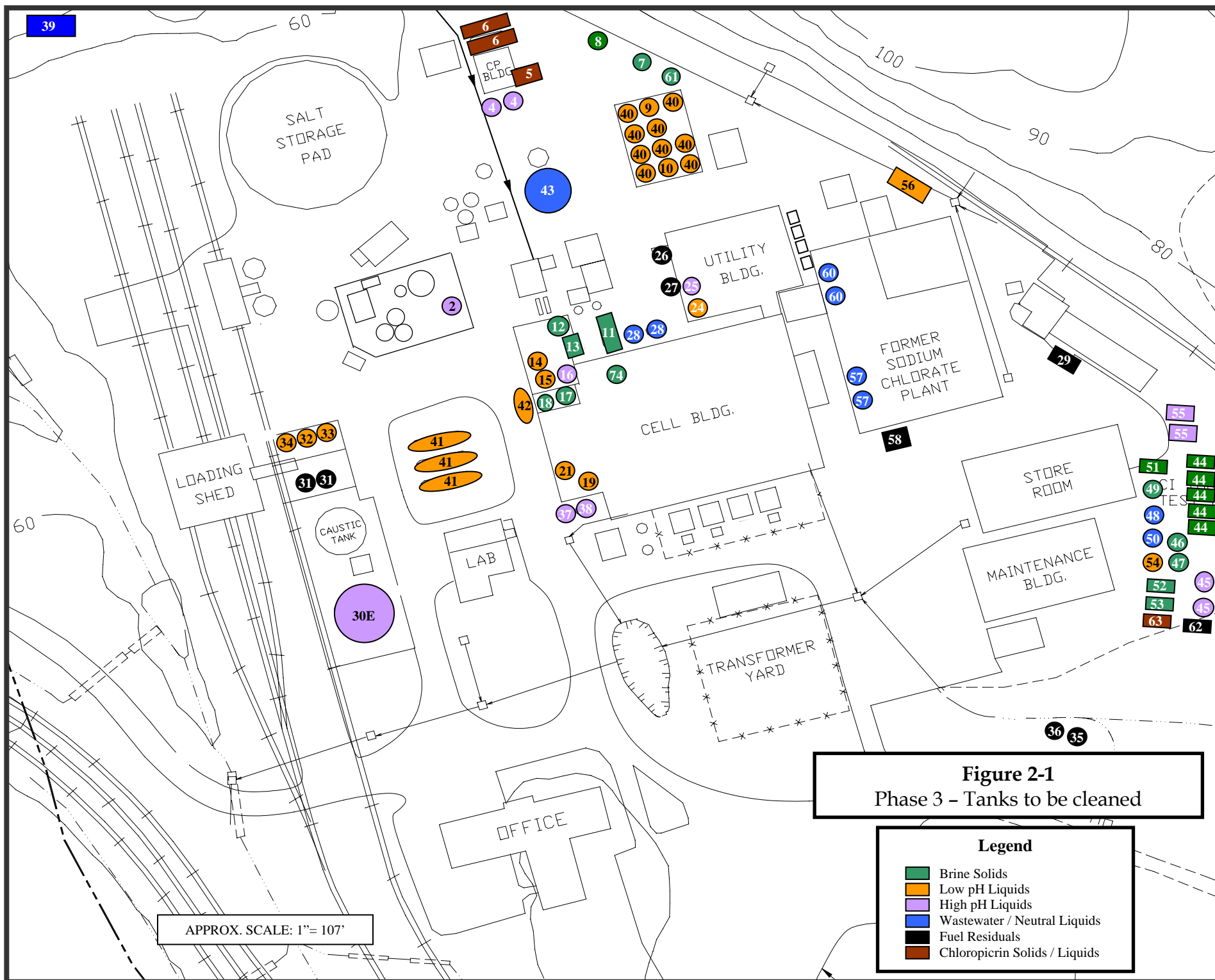
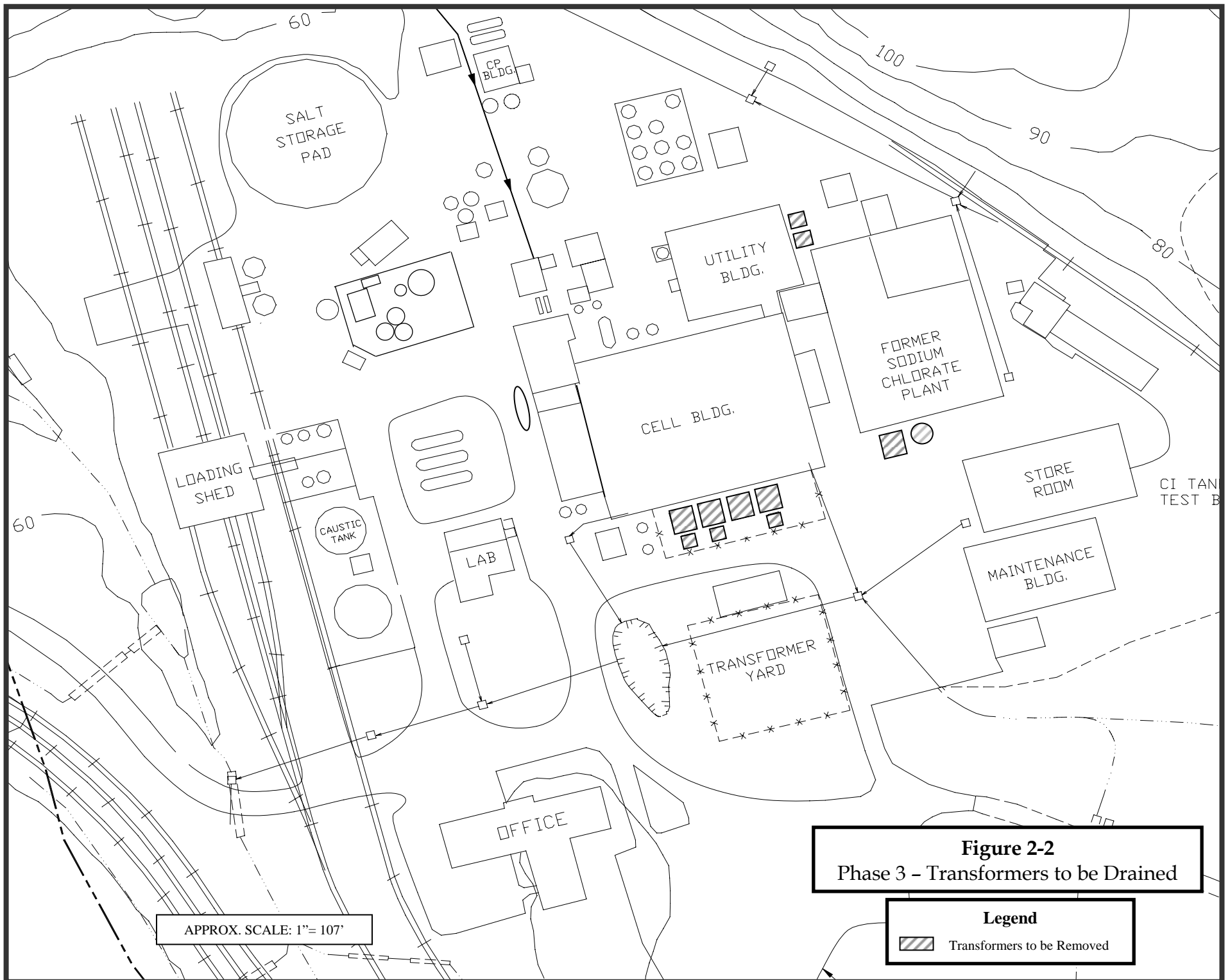


Table 2-2
Oil-Cooled Electrical Equipment Status and Disposal Actions

Equipment No.	Description	PCB Conc. in Oil (ppm)		Status	Disposal Action
		Apr-94	Jan-98		
502-02	South Main Transformer	13.0	10.9	active	none
502-01	North Main Transformer	<1.0	1.1	active	none
501A	"A" Phase "OCB"	<1.0	1.2	active	none
501B	"B" Phase "OCB"	1.1	<1.0	active	none
501C	"C" Phase "OCB"	<1.1	<1.0	active	none
504-01A	#1 Regulating Transformer	121.0	105.0	deactivated, drained	scrap
504-01B	#1 Load Tap Changer	63.1	<1.0	deactivated, drained	scrap
504-01C	#1 Rectifier Transformer	40.1	32.9	deactivated, drained	scrap
504-02A	#2 Regulating Transformer	57.8	63.6	deactivated, drained	scrap
504-02B	#2 Load Tap Changer	20.2	<1.0	deactivated, drained	scrap
504-02C	#2 Rectifier Transformer	93.6	76.1	deactivated, drained	scrap
504-03C	#3 Rectifier Transformer	241.0	198.0	deactivated, drained	scrap
504-04A	#4 Regulating Transformer	52.8	50.2	deactivated, drained	scrap
504-04B	#4 Load Tap Changer	23.4	7.0	deactivated, drained	scrap
504-04C	#4 Rectifier Transformer	71.6	129.0	deactivated, drained	scrap
507A	Em. Substation Transformer	n/a	n/a	active	none
507B	Em. Substation Transformer	n/a	n/a	active	none
507C	Em. Substation Transformer	n/a	n/a	active	none
507	Old Em. Substation Transformer	n/a	n/a	in storage, not drained	scrap
510A	"A" York Pac Transformer	<1.0	<1.0	deactivated, not drained	scrap
510B	"B" York Pac Transformer	<1.0	<1.0	deactivated, not drained	scrap
511	#1 Substation Transformer	n/a	<1.0	active	none
512	#2 Substation Transformer	<1.0	<1.0	active	none
513	#3 Substation Transformer	<1.0	<1.0	in storage, not drained	scrap



be scrapped. This work will be performed by a specialty subcontractor licensed to scrap and dispose of these items. CDM will use a specialty subcontractor to perform this work. Alternatively, these items may be sold for reuse. Several parties have contacted CDM inquiring about the purchase of particular electrical items, but no firm offers have been submitted.

2.2.5 Removal and Disposal of Tanks and Vessels

This task includes the removal and disposal of scrap tanks and vessels from the plant yard areas and from locations that will be impacted by the demolition of plant buildings. These items are identified on **Table 2-3**. The work will consist of cutting the tanks to appropriately sized pieces, loading shipping the material off site in rolloff containers for recycling or disposal. The decontamination and disposal procedures and criteria are discussed in Section 3.

2.2.6 Scrap and Debris Disposal

The scope of this task is to clear the site of miscellaneous scrap and debris. The scope of work will include the following tasks:

- Remove and dispose of scrap piping and equipment in the plant yards. These items are listed in **Table 2-4**.
- Remove and dispose of miscellaneous waste and debris at individual locations and in piles throughout the plant yards, including wood waste, and scrap metal.
- General cleanup of the interior of the Tank Car Test Building.
- General cleanup of the interior of the Nitromethane building, including rock core samples and miscellaneous debris.

One tank stored in the plant yard is covered with asbestos insulation, and one length of Transite pipe was found in the plant yard. These items will be moved to the main plant area and stored for later asbestos abatement along with the larger asbestos abatement program required for demolition of the buildings.

2.2.7 Building Interior Rinsing

To reduce the risk of the release of mercury-contaminated dust to the environment during the future demolition of buildings, CDM will rinse the accessible interior surfaces of the Cell Building, Liquefaction Building, and Drying Shed. This will be accomplished with hoses deployed from man-lifts inside the buildings. Wash water will be collected in the building sumps and treated at the onsite wastewater treatment plant. After the washing is completed, the building sumps will be cleaned as discussed below.

2.2.8 Sump Cleaning

There are 10 sump locations in buildings and yard areas throughout the plant containing residual liquids and solids that may contain varying levels of mercury

Table 2-3
Phase 3 - Tank Removal and Disposal

Tank No.	Description	Location	Size	Mat'l	Est. Wt. (lbs)	Tank Mat'l Hg Conc. (mg/kg)
7	Brine Sand Filter Liner	CP Area	8' X 8'	Steel, FRP	4,665	1.09
8	Old Brine Pump Tank	Lagoon Area	8' X 17'	FRP	1,336	0.16
11	Brine Receiver	Liquefaction	10' x 22'	Steel,Lined	13,121	1,240.56
12	Brine Condensate Tank	Liquefaction	4' X 3'	FRP	159	4.26
14	HCL Head Tank	Liquefaction	6' X 6'	FRP	429	6.44
15	Sulfuric Head Tank	Liquefaction	6' X 7'	Steel	2,916	3.69
16	Soft Water Head Tank	Liquefaction	10' X 10'	FRP	1,193	49.22
17	Brine Head Tank	Liquefaction	12' x 20'	FRP	2,481	106.55
18	HCL Scrubber	Liquefaction	2' x 9'	FRP	300	0.19
19	Weak Sulfuric Dechlorinator	Drying Shed	6' X 8'	Steel, Brick	12,000	0.94
21	Chlorine Condensate Tank	Drying Shed	6' X 8'	FRP	525	1.85
24	Old HCL Boiler Treatment	Utility Bldg	3' x 4'	PVC	30	43.51
25	Old Caustic Boiler Treat	Utility Bldg	2.5' x 4'	PVC	35	n.s.
26	Day Oil Tank	Utility Bldg	10' X 20'	Steel	12,084	0.05
27	Waste Oil Tank	Utility Bldg	5' X 7'	Steel	2,308	0.94
28	(2) Old Brine Storage	W. Cell Room	12' X 20'	FRP	9,924	13.26
37	Caustic Feed Tank	Drying Shed	12' x 8'	Steel	8,164	0.17
38	Bleach Circulation Tank	Drying Shed	8' x 12'	FRP,PVC	1,336	0.42
42	30 ton Cl ₂ Catch Pot	Liquefaction	5' x 30'	Steel	15,794	0.09
44	(5) Brine Coal Filters	Scrap Yard	8' x 18'	Steel, Lined	107,765	0.40
45	(2) Bleach Towers	Scrap Yard	4' x 26'	FRP	578	0.06
46	Old Brine Storage	Scrap Yard	12' x 20'	FRP	4,962	5.92
47	Old Brine Head Tank	Scrap Yard	10' x 16'	FRP	1,670	19.90
48	Old Wastewater Precoat Tk	Scrap Yard	7' x 7'	FRP	584	0.08
49	Old Brine Pump Tank	Scrap Yard	7' x 14'	FRP	974	0.21
50	Old Wastewater Tank	Scrap Yard	12' x 20'	FRP	2,481	72.91
51	Old Brine Receiver	Scrap Yard	10' x 22'	Steel,Lined	13,121	29.06
52	Old Wastewater "D" Filter	Scrap Yard	6' x 9'	Steel,Lined	4,665	1,155.50
53	Old Brine Filter	Scrap Yard	5' x 13'	Steel,Lined	5,022	28.99
55	(2) Old Decomposer Shells	Scrap Yard	4' x 10'	Steel	4,666	17.16
56	Old 30 ton Cl ₂ Tank	North Bank	5' x 30'	Steel	15,794	0.13
57	(2) W/W Vent Tanks	CLO ₃ Bldg	55 gal	Plastic	250	0.58
58	Portable Fuel Oil Tk	CLO ₃ Bldg	200 gal	Steel	350	n.s.
60	(2) Regeneration Tanks	CLO ₃ Bldg	10' x 10'	FRP	2,386	0.55
61	Old Brine Precoat Tank	W. Cell Room	7' x 7'	FRP	974	8.72
62	Old Fuel Tank	Scrap Yard	4' x 8'	Steel	1,944	0.05
63	Old CP Calcium Dryer	Scrap Yard	1' x 8'	Steel	413	0.03
64	Wet Mist Eliminator	Drying Shed	6' x 13'	FRP	763	7.14
65	(2) Sulfuric Drying Towers	Drying Shed	5' x 27'	Steel,Brick	82,000	0.96
66	(1) Sulfuric Drying Tower	Drying Shed	5' x 27'	Steel	7,168	0.96
67	Dry Mist Eliminator	Drying Shed	4' x 14'	Steel	3,110	1.74
72	(2) Dechlorination Towers	Cell Room		Steel,Lined	35,000	n.s.

- Notes: 1) n.s. indicates not sampled
2) Tank Mat'l Hg Conc. is an average of sample results for items with more than one sample.
3) Shaded cells indicate sample result exceeds 4 mg/kg.

Table 2-4
Phase 3 - Site Debris Removal

Qty.	Description	Location	Size	Mat'l	Est. Wt. (lbs)	Tank Mat'l Hg Conc. (mg/kg)	Anticipated Cleaning and Disposal Actions
40'	Hypo Blower Pipe	CLO ₃ Bldg	12"	FRP	745	0.93	Decon piping, segment - Dispose Offsite
200'	Brine Piping	CLO ₃ Bldg	12"	FRP	3,728	2.65	Decon piping, segment - Dispose Offsite
30'	Depleted Brine Piping	CLO ₃ Bldg	14"	FRP	816	0.21	Decon piping, segment - Dispose Offsite
30'	Filtered Brine Piping	CLO ₃ Bldg	10"	FRP	378	1.20	Decon piping, segment - Dispose Offsite
20'	Filtered Brine Piping	CLO ₃ Bldg	8"	FRP	186	0.12	Decon piping, segment - Dispose Offsite
100'	Filtered Brine Piping	CLO ₃ Bldg	6"	FRP	583	0.04	Decon piping, segment - Dispose Offsite
120'	HCL Piping	CLO ₃ Bldg	4"	FRP	370	4.13	Rinse piping, segment - Dispose Offsite
350'	Sidestream Brine Piping	CLO ₃ Bldg	3"	FRP	819	115.36	Decon piping, segment - Dispose Offsite
50'	HCL Piping	CLO ₃ Bldg	2"	FRP	57	6.92	Rinse piping, segment - Dispose Offsite
20'	Saturator Brine Piping	Scrap Yard	14"	FRP	544	0.52	Rinse, segment, cap ends of pipe - Dispose Offsite
200'	Saturator Brine Piping	Scrap Yard	10"	FRP	2,526	1.83	Rinse, segment, cap ends of pipe - Dispose Offsite
60'	PVC Piping	Scrap Yard	5"	PVC	300	0.07	Rinse piping, segment - Dispose Offsite
120'	Brine Transfer Piping (blk)	Scrap Yard	8"	FRP	1,118	0.12	Decon piping, segment - Dispose Offsite
40'	Brine Transfer Piping	Scrap Yard	6"	FRP	233	0.33	Decon piping, segment - Dispose Offsite
120'	Surplus Brine Pipe	Nitro Bldg	18"	FRP	4,825	2.46	Decon piping, segment - Dispose Offsite
100'	Surplus Brine Pipe	Nitro Bldg	14"	FRP	2,721	0.19	Decon piping, segment - Dispose Offsite
300'	Surplus Brine Pipe	Nitro Bldg	12"	FRP	5,592	1.11	Decon piping, segment - Dispose Offsite
60'	Surplus Brine Pipe	Nitro Bldg	10"	FRP	757	4.13	Decon piping, segment - Dispose Offsite
140'	Filtered Brine Piping	Nitro Bldg	8"	FRP	1,304	0.04	Decon piping, segment - Dispose Offsite
100'	Surplus Brine Pipe	Nitro Bldg	6"	FRP	583	1.61	Decon piping, segment - Dispose Offsite
80'	Surplus Brine Pipe	Nitro Bldg	4"	FRP	247	39.99	Decon piping, segment - Dispose Offsite
40'	Surplus Brine Pipe	Nitro Bldg	2"	FRP	46	9.09	Decon piping, segment - Dispose Offsite
220'	Filament Wound FRP Pipe	Nitro Bldg	6"	FRP	1,282	1.61	Decon piping, segment - Dispose Offsite
3	HCL Plant Roof Hoods	Scrap Yard	3' x 8'	FRP	550	0.11	Rinse, segment - Dispose Offsite
800'	Plastic Angle	Scrap Yard	3' x 3"	PVC	200	12.51	Rinse, segment - Dispose Offsite
3	Brine Filter Catch Pans	Scrap Yard	4' x 4'	FRP	250	0.34	Rinse, segment - Dispose Offsite
200'	PVC Pipe	Nitro Bldg	4', 6"	FRP	375	0.07	Decon piping, segment - Dispose Offsite
4	HCL Combustion Shroud	Nitro Bldg	4' x 20'	FRP	2,700	0.03	Rinse, segment - Dispose Offsite
1	HCL Pump Tank	Nitro Bldg	3' x 4'	FRP	179	1.03	Remove liquids, Dispose Offsite-Rinse tank
1	HCL Plant Scrubber	Nitro Bldg	1.5' x 6'	FRP	253	0.19	Remove saddles, Dispose Offsite-Rinse tank
1	Brine Clarifier Rake	Scrap Yard	Misc pcs.	Steel, FRP	unknown	7.09	Decon, segment - Dispose Offsite
1	Clarifier Liner, Centerwell	Scrap Yard	Misc pcs.	FRP	unknown	2.56	Decon, segment - Dispose Offsite
3	Water Chillers	Cooling Tower	Misc pcs.	Steel	unknown	n.s.	Wash exterior - Dispose Offsite
1	Old Decomposer Basket	Scrap Yard	4' x 6'	Steel	1,080	34.00	Decon, segment - Dispose Offsite
2	Brine Plate Coolers	Scrap Yard	2' x 6'	Titanium	2,000	1.04	Disassemble, Decon - Dispose Offsite
10	Drums Demineralizer Resin	Scrap Yard	3.4 yd ³	Resin	2,500	0.03	Dispose Offsite
	Coal Filter Media	Scrap Yard	125 yd ³	Charcoal	270,000	27.17	Remove coal, Dispose Offsite-Rinse tank
	Bleach Tower Media	Scrap Yard	9.7 yd ³	Plastic	5,200	0.15	Remove packing, Dispose Offsite-Rinse tank
	Decomposer Graphite	Nitro Bldg	7.6 yd ³	Graphite	17,819	0.25	Package - Dispose Offsite
14	Used 1 ton Hg Cylinders	Cell Room	1.5' x 2.5'	Steel	3,318	n.s.	Decon, secure - Dispose Offsite
4	Used Hg Collection Tanks	Cell Room	Assorted	Steel	1,294	n.s.	Decon, secure - Dispose Offsite

Notes: 1) n.s. indicates not sampled

2) Tank Material Hg Concentration is an average of sample results for items with more than one sample.

3) Shaded cells indicate sample result exceeds 4 mg/kg, or mercury concentration assumed to exceed 4 mg/kg.

contamination. These sump locations are listed on **Table 2-5** and shown on **Figure 2-3**. Each of these sumps will be cleaned. The cleaning procedure will include decanting the retained liquids, which will then be treated in the onsite wastewater treatment plant. The solids will be removed and sent offsite for disposal as hazardous waste. The sumps will then be rinsed to remove gross contamination. Rinse water will also be treated at the onsite wastewater treatment plant.

2.2.9 Recovery of Elemental Mercury on Slab West of Cell Building

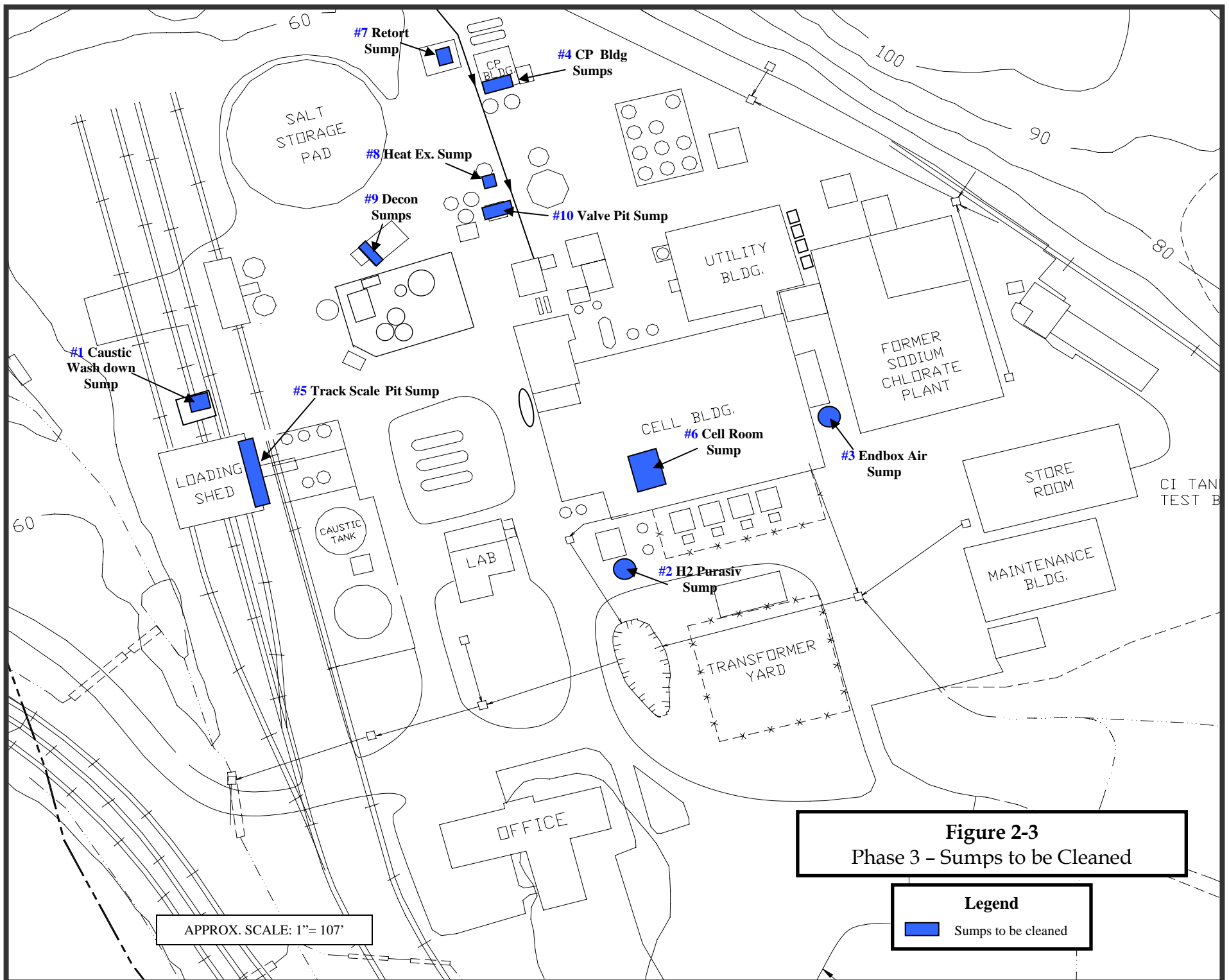
This task involves the recovery of elemental mercury that is contained within a curbed slab located immediately to the west of the Cell Building in the former Brine Receiver Area. The slab measured approximately 24 ft by 24 ft. and is covered by approximately 6 inches of gravel. Pools of elemental mercury have been noted on top of this slab beneath the gravel cover. The mercury is believed to be the result of plant equipment failures during the operation of the plant. The location of the slab is shown on **Figure 2-4**.

To recover this mercury, CDM intends to excavate the gravel cover from the top of the slab using light excavating equipment combined with manual labor. The gravel will be transported to the decontamination area inside the Cell Building, where it will be placed on screens set on top of decontamination tubs. The gravel will then be washed and screened to carry fine soil and mercury through the screen to the tub below. Washed soil will be stockpiled, tested and disposed of. CDM anticipates that the material will be able to be disposed of as non-contaminated soil in an industrial waste landfill. Liquid mercury and fine material washed from the gravel will be disposed of by retort.

During and after removal of the gravel cover, liquid mercury will be collected from the slab using a mercury vacuum. The slab will then be washed to remove visible traces of mercury and debris. CDM will then cover the slab with polyethylene sheeting. Berms will be established at the perimeter of the slab to divert stormwater runoff from the excavated area.

Table 2-5
Phase 3 - Sump Cleaning

Sump No.	Description	Location	Size	Material	Assumed Contents	Est. Quantity	Anticipated Cleaning and Disposal Actions
1	Caustic Washdown	Loading Area	5.5' x 5' x 5.5'	Concrete/FRP lined	Hi pH Liquids	411 gals	Pump liquids, rinse - Process Onsite
2	Hydrogen Purasiv	E. Cell Room	2' x 6'	Steel	Water, Hg	70 gals	Pump liquids, rinse - Process Onsite
3	Air Purasiv	N. Cell Room	4' x 4'	Steel	Water, Hg	375 gals	Pump liquids, rinse - Process Onsite
4	Chloropicrin Bldg	CP Area	3.5' x 3.5' x 4'	Concrete	Water, CP	183 gals	Decant liquids,process Onsite- Remove solids,Dispose Offsite
4	Chloropicrin Bldg	CP Area	2.5' x 3.5' x 4'	Concrete	Water, CP	196 gals	Decant liquids,process Onsite- Remove solids,Dispose Offsite
5	Track Scale Pit	Loading Area	49' x 10' x 8'	Concrete	Water, Solids	5,500 gals	Decant liquids,process Onsite- Remove solids,Dispose Offsite
6	Cell Room Sump	Cell Bldg	4.5' x 5.5' x 11'	Concrete, Lined	Hg H ₂ O,Solids	In Use	Decant liquids,process Onsite- Remove solids,Dispose Offsite
6	Cell Room Sump	Cell Bldg	4.5' x 5.5' x 11'	Concrete, Lined	Hg H ₂ O,Solids	In Use	Decant liquids,process Onsite- Remove solids,Dispose Offsite
7	Retort Sump	Retort Bldg.	1.5' x 1.5' x 1'	Concrete	Retort Solids	Residue	Remove solids, rinse - Process Onsite
8	Brine Heat Ex. Sump	Brine Area	2' x 2' x 4'	Concrete	Brine Solids	unknown	to be determined (top filled with concrete)
9	Decon Bldg Sump	Brine Area	2' x 2.5' x 2.5'	Concrete	Decon Solids	19 gals	Pump liquids, rinse - Process Onsite
9	Decon Bldg Sump	Brine Area	2' x 2.5' x 2.5'	Concrete	Decon Solids	37 gals	Pump liquids, rinse - Process Onsite
10	Pump House Valve Pit	Brine Area	6.5' x 6.5' x 8.5'	Concrete	Ground Water	1,738 gals	Pump liquids - Process Onsite



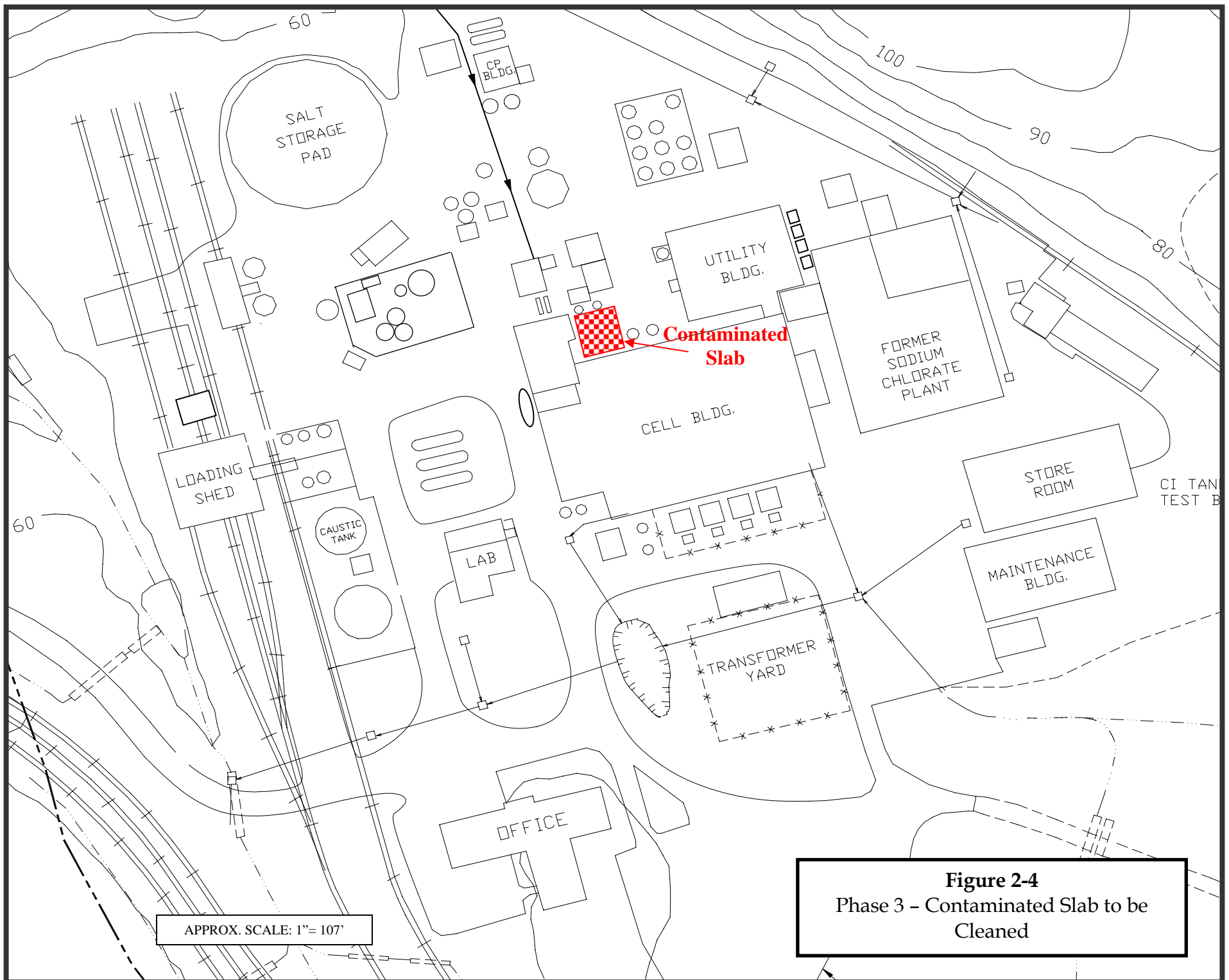


Figure 2-4
Phase 3 - Contaminated Slab to be
Cleaned

Section 3

Material Decontamination, Transportation, and Processing

3.1 General Decontamination and Processing Strategy

The materials generated from the Phase 3 dismantling operation will be decontaminated and disposed of or recycled according to the general strategy consistent with the Phases 1 and 2 dismantling. This general strategy includes the following steps:

- Removed materials will be pressure washed to remove residual free mercury contamination, and gross surface contamination.
- Additional decontamination will be performed as required, and as described below.
- Representative samples of decontaminated material will be tested for total mercury concentration.
- Material having less than 4 mg/kg total mercury will be either recycled, or disposed of as non-hazardous waste.
- Material having greater than or equal to 4 mg/kg total mercury will be disposed of as hazardous waste, either in a non-US landfill or through a licensed treatment facility.
- Material that exceeds 4 mg/kg total mercury may be tested using the TCLP method. If TCLP results are less than 0.2 mg/l, the material may be disposed of in an industrial waste landfill.

Pursuant to Section 6.4 of the QAPP, field duplicate samples will be collected as part of the waste stream characterization and confirmatory sampling procedures. Field duplicates will be collected at a rate of 10 percent.

3.2 Decontamination Procedures

CDM has developed a significant amount of experience in decontamination procedures during the decontamination pilot test and Phase 1 and 2 dismantling work performed to date. These procedures have been used successfully for the various types of materials comprising the tanks and piping to be dismantled in Phase 3. CDM intends to employ these same procedures for decontamination of the materials generated during the Phase 3 operations.

The objective of the decontamination operations will be to remove surface contamination to the extent practical such that dismantled materials can be disposed

of as non-hazardous waste. Based on past experience, it is anticipated that possibly three levels of decontamination will be employed. The first level of decontamination is a high-pressure water wash, which is performed on all materials. For materials for which it is necessary and practical to perform a higher level of decontamination, a procedure using high-pressure water washing followed by mechanical scrubbing is used. In addition to these procedures, CDM will also use a proprietary sodium bicarbonate-based media blasting process for materials that require a more aggressive decontamination step. This procedure, which has been used successfully during Phases 1 and 2, may be employed for Phase 3 materials. These procedures are summarized below.

High-Pressure Water Wash Decontamination Procedure

1. Assign batch number and tag the material to be decontaminated.
2. Maintain a water layer on the bottom of the all decontamination cribs.
3. Place segmented material over/on decontamination cribs.
4. Utilize **only** a 40-degree flat spray nozzle at either 2,500 or 3,500 psi.
5. Hold high-pressure spray gun approximately 1 ft from material surface.
6. Minimize over spray to decontamination area floor.
7. Cleaning of each material segment will consist of three to five passes of the water stream, over all exposed surfaces.
8. Drain excess decontamination liquid from material into decontamination bath.
9. Remove material and place on transportation device.
10. Transport clean material **either** to the temporary staging area or directly into appropriate disposal container.
11. Pump accumulated decontamination liquids to wastewater treatment system.
12. Enter date and type of decontamination on Material Handling Form.

High-Pressure Water Wash/ Scrubbing Decontamination Procedure

1. Assign batch number and tag material to be decontaminated.
2. Maintain a water layer on the bottom of the decontamination crib.
3. Place segmented material over/on decontamination cribs.
4. Utilize **only** a 40-degree flat spray nozzle at either 2,500 or 3,500 psi.
5. Hold high-pressure spray gun approximately 1 ft from material surface.
6. Cleaning of each material segment will be three to five passes of the water stream over all exposed surfaces.
7. Minimize overspray to decontamination area floor.
8. Clean the material with an abrasive tool (wire brush).
9. Repeat steps 4 through 7.
10. Drain excess decontamination liquid from material into decontamination bath.
11. Remove material and place on transportation device.
12. Transport clean material **either** to the temporary staging area or directly into appropriate disposal container.
13. Pump collected decontamination liquids to wastewater treatment system.
14. Enter date and type of decontamination on Material Handling Form.

Armex Blaster Model 13SX Decontamination Procedure

1. Feed Armex Blasting Unit with 150# (psig) dry utility air utilizing a 2" reinforced line.
2. Adjust Blast inlet air pressure to 50# (psig).
3. Regulate tank media pressure to 55# (psig).
4. Maintain differential unit pressure to 7# (psig).
5. Hold high-pressure spray nozzle approximately 6" from material surface.
6. ARMEX blast entire surface
7. 2,500# high pressure water wash all material surfaces.
8. Minimize overspray to decon area floor.
9. Drain excess decon liquid from material into decon bath.
10. Inspect all material for visible mercury. None should be seen!
11. Remove material and place on transportation device.
12. Transport clean material either to the temporary staging area or directly into appropriate disposal container.

3.3 Decontamination Area

The new decontamination area established for Phase 2 dismantling activity, located in the former sludge loading building, will be used to decontaminate the materials generated by the Phase 3 dismantling. Its construction design will accommodate the placement of large items such as tanks, adding ease of handling for decon and dismantling work.

3.4 Stockpiling

Stockpiling of cleaned materials from Phase 3 for disposal will be done in the rail car loading shed. This stockpile area is under cover and will be for materials and items considered to be hazardous. Materials that are characterized to be non hazardous, including items that can be effectively decontaminated will be placed in roll-offs and stockpiled on the "former salt pad" which was established for Phase 2 activity.

3.5 Containerization and Loading

Containerization and loading will be consistent with the Phase 1 and 2 operations. Container types will be chosen based on compatibility with the material to be transported, and the requirements of the disposal facilities. The majority of materials will be shipped in 30 or 40-cubic yard steel roll-off containers. Sludge and sediment from tank bottoms will likely be drummed for disposal. Packing media will be drummed, placed in lined roll-off containers, or packed in 1-cubic yard fabric Wrangler Packs TM. 1-metric ton carbon steel bulk mercury cylinders will be used to collect and transport elemental mercury. Loading will be confined to the secure, fenced portion of the site.

3.6 Transportation

All waste haulers hired by CDM will be licensed in accordance with State of Maine and federal regulations, and will be consistent with the Phase 1 and 2 operations.

3.7 Disposal Facilities

Landfills and disposal facilities that may be used during this project are listed in the following table.

Facility	EPA ID No.	Waste Description
Mecury Waste Solutions 21211 Durand Avenue Union Grove, WI 53182	WID00000356	Retorting of Mercury contaminated equipment and materials.
Waste Management Rr 2 Norridgewock, ME 04957	MED982546699	Industrial landfill for low-level mercury waste.
Waste Management Turnkey Facility Gonic, NH 03839	NHD980914634	Industrial landfill for low-level mercury waste.
NSSI/Recovery Services Houston, TX 77234	TXD982560294	Retort of Misc. mercury contaminated equipment and materials.
Various salvage companies		Recycled of clean metals, and misc. materials.
Michigan Disposal 49350 North Service Drive, I-94 Belleville, MI 48197	MID000724831	Mercury contaminated debris and sediments, >260 mg/kg total Hg & <260 mg/kg total Hg
ENSCO Inc. American Oil Road Eldorado, AR 71730	ARD069748192	Mercury and sodium hydroxide contaminated metal hydroxide sludges (cell room sump sludge) >260 mg/kg total Hg
Clean Harbors of Braintree, Inc. 1 Hill Avenue Braintree, MA 02189	MAD053452637	Mercury contaminated, sulfur-impregnated carbon and waste laboratory and maintenance chemicals
Clean Harbors, Inc. 11800 S. Stony Island Avenue Chicago, IL 60617	ILD000608471	Waste laboratory chemicals
E. I. DuPont De Nemours & Co. Chambers Works – Route 130 Deepwater, NJ 08023	NJD002385730	High pH chemical neutralization wastewater from chloropicrin equipment decontamination
Stablex of Canada 760 Industrial Boulevard Blainville, Quebec J7C 3V4	NYD980756415	Mercury contaminated materials wastewater treatment and brine sludge (K071, K106), >260 mg/kg total Hg

Appendix A
Photographs of Tanks to Be
Cleaned and Removed

#2 Spare Surplus
Caustic Tank



#4 Bleach Storage
Tanks



#5 Bone Char Filter



#6 Chloropicrin
Storage Tanks



#7 Brine Sand Filter



#8 Old Brine Pump
Tank



#9 HCL Stg Overflow
Tank



#10 B-1 HCL Storage



#11 Brine Receiver



#12 Brine Condensate
Tank



#13 Brine
Dechlorination Cooler



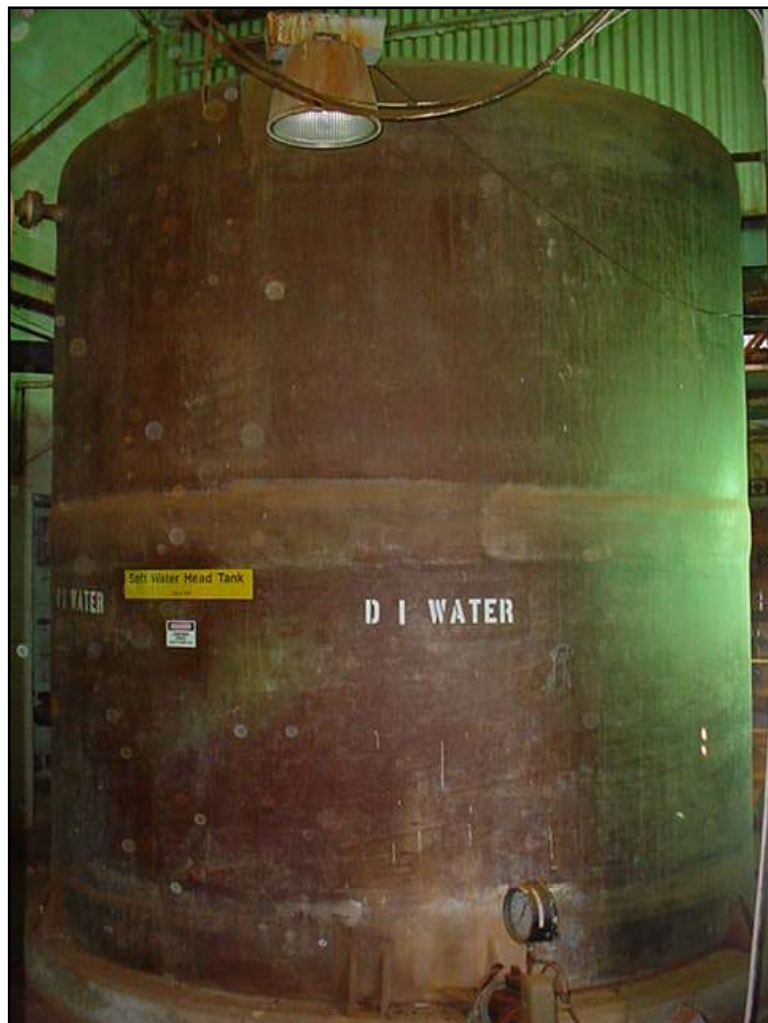
#14 HCL Head Tank



#15 Sulfuric Head
Tank



#16 Soft Water Head
Tank



#17 Brine Head Tank



#18 HCL Scrubber



#19 Weak Sulfuric
Dechlorinator



#21 Chlorine
Condensate Tank



#24 Old HCL Boiler
Treatment Tank



#25 Old Caustic Boiler
Treatment Tank



#26 Day Oil Tank



#27 Waste Oil Tank



#28 Old Brine Storage



#29 Kerosene Tank



#30 Caustic Storage
Tanks



#31 Fuel Oil Storages



#32,33,34 45%-Weak-
Strong Sulfuric Storage



#35 Diesel Oil Storage



#36 Misc Oil Tank



#37 Caustic Feed Tank



#38 Bleach Circulation
Tank



#39 River Well
Treatment Tank



#40 HCL Storage
Tanks



#41 Chlorine Storage
Tanks



#42 30-ton Chlorine
Catch Pot



#43 Process Water
Storage Tank



#44 Brine Coal Filters



#45 Bleach Towers



#46 Old Brine Storage



#47 Old Brine Head
Tank



#48 Old Wastewater
Precoat Tank



#49 Old Brine Pump
Tank



#50 Old Wastewater
Tank



#51 Old Brine Receiver



#52 Old Wastewater D
Filter



#53 Old Brine Filter



#54 Old Sulfuric Storage



#55 Old Decomposer
Shell



#56 Old 30 ton Chlorine
Tank



#57 Wastewater Vent
Tanks



#58 Portable Fuel Oil
Tank



#60 Regeneration Tanks



#61 Old Brine Precoat
Tank



#62 Old Fuel Tank



#63 Old CP Calcium
Dryer

